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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/748,832	12/27/2000	Ligang Lu	YOR920000783US1	6286

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EXAMINER

VO, TUNG T

ART UNIT	PAPER NUMBER
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2613

DATE MAILED: 09/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/748,832

Applicant(s)

LU ET AL.

Examiner

Tung Vo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-11 and 13-25 is/are pending in the application.
- 4a) Of the above claim(s) 2 and 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-11 and 13-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 08/01/2005 has been entered.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an

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international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-6, 9-11, and 13-19 rejected under 35 U.S.C. 102(e) as being anticipated by Nilsson et al. (US 6,625,320).

Re claim 1, Nilsson discloses a system for transcoding compressed video signal including a plurality of pictures (fig. 3) comprising:

a decoder (2, 4, 6, 10 of fig. 3) to completely or partially decode an input compressed video signal (1 of fig. 3);

a look-ahead estimator (31 of fig. 3) to gather information from said input compressed video signal prior to input to said decoder to estimate future signal characteristics of one or more future incoming pictures (32 of fig. 3), and to gather information from said decoder to estimate current signal characteristics of a current (30 of fig. 3; col. 2, lines 61- 67);

an encoder (26 of fig. 3) to compress the reconstructed video signal according to a coding scheme derives from said current and future signal characteristics from said look-ahead estimator (31, MV3 of fig. 3).

Re claim 3, Nilsson further discloses wherein said look-ahead estimator derives a complexity of said current picture being transcoded (col. 9, lines 53-61).

Re claim 4, Nilsson further discloses wherein said look-ahead estimator estimates complexity of each portion of said current picture (fig. 4).

Re claims 5 and 6, Nilsson further discloses wherein said portion of a slice and a macroblock of said current picture (fig. 4, note MPEG standard, see col. 5, lines 19-53).

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Re claim 9, Nilsson further discloses a method for video transcoding comprising: decoding, at least partially, a compressed video signal to produce an at least partially reconstructed video signal, said compressed video signal being a data stream coded by a first coding scheme (col. 2, lines 45-47);

determining a current picture complexity for a portion of a current picture in said at least reconstructed video signal (col. 2, lines 37-43 and 50-56) looking ahead to estimate a future complexity for a portion of a future picture in said at least partially reconstructed video signal (col. 2, lines 61-67);

selecting a second coding scheme based on said current picture complexity and future picture complexity (31, MV3, and 15 of fig. 3);

encoding said current picture using said second coding scheme and said current picture complexity (col. 2, lines 49-50).

Re claims 10 and 11, Nilsson further discloses the motion estimator (ME, 31 of fig. 3) and the processor (31 of fig. 3) for determining current signal characteristics for said current picture (col. 10, lines 36-47), using said current signal characteristics in selecting said second coding scheme (col. 9, lines 52-col. 10, line 24, see MV3 and 15 of fig. 3), and using said current signal (col. 8, lines 8-38) characteristics in encoding said current picture.

Re claims 13-15, Nilsson further discloses determining a future (MC, 15 of fig. 3) picture complexity for a portion (fig. 4) of a future picture in said at least partially reconstructed video signal (30 of fig. 3), using said picture complexity in selecting said second coding scheme (26 of fig. 3, note encoder (26) for encoding a decoded video picture based employing the second scheme coding), using said future signal characteristics in encoding said current picture (MC, 15

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of fig. 13, note the motion compensation selects the second coding scheme based on the future picture (predicted picture) for encoding the current picture (inter-frame coding), wherein the motion estimation (ME, 31 of fig. 3) determining future signal characteristics for said future picture (col. 2, lines 61-62) and using said future signal characteristics in selecting said second coding scheme).

Re claims 16 and 17, Nilsson further discloses wherein said portion of a slice and a macroblock of said current picture (fig. 4).

Re claims 18-19, Nilsson further discloses determining a macroblock complexity for said macroblock; and using said macroblock complexity in selecting said second coding scheme (fig. 4) and using said macroblock complexity in encoding said current picture (26 of fig. 3).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 7-8, and 20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nilsson et al. (US 6,625,320) as applied to claims 1 and 9, and further in view of Kwok et al. (US 5,889,561).

Re claims 7-8, and 20-25, Nilsson suggests the transcoding system (fig. 3) for transcoding the encoded or compressed video signal using the picture type, motion vectors and

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quantization step size (Q2, 19 and MV3 of fig. 3), but Nilsson does not particularly teach the complexity is estimated by a function of the total bits and the average quantization step size used to code the picture, macroblock, or portion as claimed. However, Kwok teaches the complexity is estimated by a function of the total bits and the average quantization step size used to encode the picture, macro-block, or portion (42 and 47 of fig. 4; note the total bits and quantization factor (step size) are estimated by the function of SF that used in the encoder (43 of fig. 4); see also col. 6, lines 8-25).

Therefore, taking the combined teachings of Nilsson and Kwok as a whole, it would have been obvious to one of ordinary skill in the art to incorporate the function (col. 6, lines 8-25) of Kwok into the transcoding system of Nilsson for the same purpose of performing the function of the total bits and the average quantization step size used to encode the picture in the encoder as suggested by Kwok (col. 5, lines 25-34).

Doing so would allow the transcoding system to reduce the amount of data in a previously compressed video signal bit stream and provide the higher quality of information in the original signal should be exploited as much as possible and the resulting image quality of the new signal with a lower bit rate should be as high as possible as suggested by Kwok (col. 1, lines 4-6; col. 2, lines 1-6).

Response to Arguments

5. Applicant's arguments filed 10/27/2004 have been fully considered but they are not persuasive.

The applicant argued that Nilsson does not disclose a system for transcoding compressed video signals including “a look-ahead estimator to gather information from said input compressed video signal prior to input to said decoder to estimate future signal characteristics of one or more future incoming pictures, and to gather information from said decoder to estimate current signal characteristics of a current picture, pages 8-9 of the remarks.

The examiner respectfully disagrees with the applicant. It is submitted that Nilsson clearly discloses a system for transcoding compressed video signal including a plurality of pictures (fig. 3) comprising a look-ahead estimator (31 of fig. 3) to gather information from said input compressed video signal (32 of fig. 3, e.g. the selected/computed vector, MV'1, as information, from the input compressed video signal; wherein the input compressed video signal is prior inputting to the decoder (2 of fig. 3)) prior to input to said decoder to estimate *future signal characteristics* of one or more future incoming pictures (31 of fig. 3, e.g. estimated motion vectors are generated for a current frame of the video signal, using vectors which, in the received signal, accompanying at least one other frame of the video signal; this means a future signal characteristics of one or more future incoming picture is estimated by motion estimation (31 of fig. 3) using forward and/or backward estimated motion vectors of the current frame); and to gather information from said decoder (30 of fig. 3, e.g. the reordered information is input to the motion estimation (31 of fig. 3)) to estimate current signal characteristics of a current picture (col. 2, lines 61- 67, e.g. current frame and at least other frame are estimated). In view of the discussion above, the Nilsson clearly anticipates the claimed invention.

Conclusion

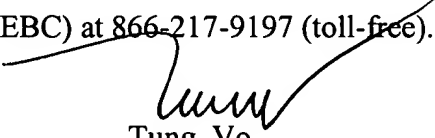
6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See previous Office Action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung Vo whose telephone number is 571-272-7340. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on 571-272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tung Vo
Primary Examiner
Art Unit 2613